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Gloucestershire County Council.

1917.



# ANNUAL REPORT

OF

The Medical Officer of Health

FOR THE

ADMINISTRATIVE COUNTY OF GLOUCESTER

**FOR 1916.**



SHIRE HALL, GLOUCESTER,

DECEMBER, 1917.



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HEALTH DEPARTMENT,

SHIRE HALL,

GLOUCESTER,

26th November, 1917.

*To the Chairman and Members*

*of the Public Health and Housing Committee.*

GENTLEMEN,

I regret that my Report is laid before you at so late a date, owing to the delay in the Annual Reports reaching me. Even so, it must be taken only as an interim report, as—though the essential figures are complete—many of the reports have not yet reached me, and several of those that have come to hand are themselves only interim reports, as suggested by the Local Government Board. It will be found, therefore, that the present summary is even more reduced than it was last year.

The statistical rates are based on what must be regarded, more or less, as approximate estimates of the population and are, consequently, not strictly comparable with those for previous years. This, however, does not apply to the infantile mortality, and it is satisfactory that so low a rate as 67 deaths per 1,000 births is recorded. Another satisfactory feature in the year's statistics is the low prevalence of infectious diseases.

Measures whereby it is hoped that maternal and infantile disease and deaths will be still further reduced are mentioned in the section of the Report dealing with Maternity and Child Welfare (p. 16). A fairly full note is also made on the scheme for the treatment of Venereal Disease. (p. 15.)

From the fact that so little has been done during the war in the matters of improving the resources of the County in respect to water supply, providing drainage for parts requiring it, and, particularly, the provision of housing, there will be considerable arrears of work to overtake when opportunity allows. On the other hand, considering all the difficulties of the present time, sanitary administration has been as well maintained as could be expected.

I have the honour to remain, Gentlemen,

Your obedient servant,

J. MIDDLETON MARTIN,

*County Medical Officer of Health.*



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### SANITARY STAFF.

In 1915 six of the 22 Medical Officers of Health were on active service, 5 with the army and 1 in the navy. During 1916 one of the former—Dr. Meyrick Jones—returned to his civilian duties, leaving 5 still serving with the forces.

It was with great regret that I heard of the resignation of Dr. Brewis, Medical Officer of Health for the Dursley Rural District, owing to serious illness; he had held office for nearly seven years and carried out his duties most thoroughly, in spite of the claims of an extensive private practice. His resignation is a serious loss to the service as his intimate knowledge of the district can be gained only by long and careful labour on the part of his successor. Under the East Gloucestershire United Districts (Medical Officer of Health) Order, 1912, the district became a part of this United District from the date on which Dr. Brewis' resignation became operative, 1st July, 1917.

### RECEIPT OF REPORTS.

Up to the time of writing these notes (20th November, 1917) 10 of the 35 annual reports usually received had not been forwarded; some, owing to the absence of the permanent Medical Officers of Health: one, owing to prolonged serious illness: and the remainder, probably, owing to the unusual calls on the time of men who are also engaged in private practice.

### POPULATION.

The difficulties in devising estimates of population on which to base the statistics for 1916 are even greater than they were in 1915. The method adopted by the Registrar General in obtaining the figures which he has issued for the use of Medical Officers of Health is as follows:—For *birth rates* he gives estimated populations “based on the assumption that the ratio “between total and civilian population is the same in the district as in England and Wales as a whole. With a view to “approximation to the population amongst which the births “have occurred the *total* population of England and Wales has “for this purpose been calculated by adding to the published

"estimate for 1914 the natural increase up to the middle of "1916." For *death rates* estimates of the *civilian* population of the various districts are taken. These estimates of the Registrar General are given in Table I. and have been used for calculating the birth and death rates.

The estimate of the *total* population of the County on the usual basis at the middle of 1916 would have been 333,125, while that of the *civil* population given by the Registrar General is 300,513. Owing to the necessity of making special estimates of the population on account of the peculiar conditions now obtaining, the rates for these war years are not strictly comparable with those of peace time, especially in the case of the smaller districts; on the whole, however, they probably represent the facts as nearly as practicable in large areas.

## VITAL STATISTICS.

TABLE 2.  
BIRTH RATES.

Revised on 1911 Census.

	1916 *	1915 †	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905
Urban ... ..	18.0	17.3	17.6	18.3	17.6	20.0	20.2	21.1	20.5	20.3	21.8	22.4
Rural ... ..	17.8	18.35	19.2	20.2	20.2	20.9	21.3	21.85	23.2	22.1	23.4	23.6
Administrative County	17.9	18.0	18.75	19.6	19.1	20.6	20.95	21.6	22.1	21.6	22.9	23.25
England and Wales ...	21.6	21.9	23.8	24.1	23.9	24.3	25.1	25.8	26.7	26.5	27.2	27.3

\* The rate for 1916 is based on the estimate of total population as explained in the text.

† The rate for 1915 is based on the estimate of the total population for 1914.

The actual number of births registered in the County was 5,852, a decrease of 126 on that in the previous year; the number in Urban Districts was very slightly higher than in 1915 and all the decrease occurred in the Rural Districts. The birth rate as calculated (17.9) is almost the same as in the previous year (18.0).

Though the total births decreased, there was again an actual increase in the number of illegitimate births from 252 (4.1 %) of total births in 1914 to 281 (4.7 %) and 317 (5.4 %), the



last (317) being the highest recorded in any year. This increase is seen in both the total urban and the total rural districts. The sanitary districts with the highest rates were Tetbury U.D. and Marston Sicca R.D. (10.7), Cheltenham M.B. (8.8), Westbury-on-Severn U.D. (8.6), Awre U.D. (8.3) and Tetbury R.D. (8.1) and those with lowest rates, Stow-on-the-Wold U.D. (0), Kingswood U.D. (1.0), Stow-on-the-Wold R.D. (1.8), Northleach R.D. (2.2) and Campden R.D. (2.3).

TABLE 3.  
DEATH RATES  
revised on Census 1911.

	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905
Urban ... ..	15.4	16.9	13.7	14.1	12.6	14.1	12.6	15.0	13.7	14.2	14.5	15.0
Rural ... ..	14.6	14.8	12.2	12.6	12.6	13.0	12.9	13.0	12.35	13.4	12.9	13.9
Administrative County	14.9	15.4	12.7	13.05	12.6	13.3	12.8	13.6	12.8	13.6	13.4	14.2
Ditto, corrected for Sex and Age Distribution	13.0	13.4	11.1	11.4	11.0	11.6	11.1	11.8	11.1	11.8	11.7	12.4
England and Wales ...	14.0	14.8	13.6	13.4	13.0	14.3	13.2	14.3	14.5	14.9	15.3	15.2

The number of deaths recorded during 1916 (4,463) was 350 less than in 1915, about one-half the decrease occurring in the urban and one half in the rural districts; the total number is, however, higher than in any year in the last ten years except 1915 (4,813) and 1909 (4,464). The age groups in which decrease on the numbers in 1915 occurred mainly, are those up to 15 years of age, and the number of deaths under one year (388) was a record minimum; between 15 and 25 there was an unusually heavy mortality, but there were slight decreases in the age groups above 25.

The diseases showing most marked reductions are whooping cough (minimum of 17 deaths), diphtheria, influenza, bronchitis, pneumonia, congenital debility and nephritis; on the other hand an increase is seen with respect to measles, tuberculosis, cancer and heart diseases.

## INFANTILE MORTALITY.

TABLE 4.

	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907
Urban ... ..	66	89	72	90	70	114	86	103	97	98
Rural ... ..	66.5	83.5	76	67	73	87	72	72	77	76
Administrative County	66	85	75	73	72	95	76	81	83	82
England and Wales ...	91	110	105	108	95	130	105	109	120	118

The infantile mortality rate during 1916 reached the record minimum figure of 66, almost identically the same both in urban and rural districts: there was also a remarkable drop in the rate for the whole of England and Wales from 110 in 1915 to 91 in 1916. On analysing the deaths according to diseases it would appear that while a large part of the decrease is due to a reduction in the number of deaths from diseases of the lungs, the numbers from all the diseases, separately distinguished, are also very much smaller. Had the average mortality of 1901-10 held good during 1916 the total number of deaths would have been 524 instead of 388 the actual number that occurred, showing a saving of 136 infants. Though this record cannot but be regarded as satisfactory, there can be no doubt that there is still very considerable room for improvement, inasmuch as in this year of low infantile mortality 31 infants died of diarrhoeal diseases, 182 of congenital defects and wasting diseases, 22 of bronchitis, 35 of pneumonia and 10 from violence—a total of 280, the majority of which can probably be regarded as preventable.

The information as to the mortality amongst legitimate and illegitimate children separately, usually given, is not as yet completely available.

**NOTIFIABLE DISEASE.**

Following the decline in the prevalence of notifiable infectious disease noted in my last Report, during 1916 the number of cases notified was still lower and the minimum on record. This was more particularly due to the exceptionally low prevalence both of scarlet fever and of diphtheria. Up to the present time the final numbers for the whole County have not yet been received and the figures\* given in the following tables are derived from the weekly returns.

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\*Revised figures are given in Table II. at the end of this report.

TABLE 5.

Average Fatality (deaths per 100 cases) of Scarlet Fever, Diphtheria and Typhoid Fever.

	Scarlet Fever			Diphtheria			Typhoid Fever		
	Urban	Rural	County	Urban	Rural	County	Urban	Rural	County
1896-1898	1.82	2.09	1.98	20.4	22.3	21.7	21.0	20.9	20.9
1899-1901	2.38	1.78	1.98	10.3	15.7	13.5	15.55	16.9	16.1
1902-1904	1.73	1.88	1.84	10.5	9.9	10.1	19.0	10.5	13.4
1905-1907	.65	1.51	1.26	12.0	7.8	8.5	17.6	11.6	13.8
1908-1910	.40	1.32	1.08	6.1	10.7	9.25	25.7	13.1	19.2
1911-1913	.92	1.14	1.07	5.9	6.8	6.6	11.9	11.6	11.8
1914	.51	1.27	1.02	13.8	12.3	12.9	20.0	34.5	27.8
1915	2.80	1.23	1.71	11.2	14.1	13.4	6.7	26.7	16.7
1916	...	1.29	1.01	10.5	17.4	15.2	13.6	29.4	20.5

Assuming the figures from the weekly returns are approximately correct, from the above table it appears that the average case fatality of scarlet fever was very low (only 1 %) but this is due to the fact that no death was attributed to this disease in the urban districts in which 107 cases were notified. On the other hand there were unsatisfactory rises in the fatality of both diphtheria and enteric fever.

#### SCARLET FEVER.

TABLE 6.

	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907
Cases ... ..	496	1169	1769	1301	770	927	735	677	532	935
Deaths ... ..	5	20	18	13	7	12	7	6	6	14
Hospital Cases ... ..	...	591	935	738	413	343	309	315	232	247
Case Fatality ... ..	1.01	1.71	1.02	1.0	.91	1.29	1.22	.89	1.13	1.50
Death-rate per 1000 ...	.02	.06	.05	.04	.02	.04	.03	.02	.02	.04
England and Wales: Death-rate per 1000	.04	.07	.08	.06	.055	.05	.07	.09	.08	.09



As already mentioned the number of cases of scarlet fever during 1916 (496) was the lowest on record, the decrease from 1,169 in 1915 being very sudden; the nearest figure was 532 in 1907. From this it took 6 years to reach the maximum of 1769 in 1914 but only two years to rebound to the minimum. The districts in which the largest number of cases occurred were Chipping Sodbury R.D. (67), Cheltenham M.B. (57), Stroud R.D. (45), Lydney R.D. (40), Stow-on-the-Wold R.D. (36) and Newent R.D. (33); as regards all these, the relatively large numbers were only incidents in waning outbreaks with the exception of the two last in which they represented exacerbations. The Medical Officer of Health for the Newent R.D. says:—

“The factors in the spread were the mildness of the type of the disease and difficulties in isolation, which can be effectively done only by sending cases to hospital.”

Of the cases in the Stow-on-the-Wold R.D. the great majority occurred in one parish. In no district was more than one death attributed to this disease, and the average case fatality (1.01 %) was the lowest on record, with the exception of 1905 when it was .55 %.

#### DIPHTHERIA.

TABLE 7.

	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907
Cases ... ..	302	516	605	393	406	418	551	401	486	648
Deaths ... ..	46	69	78	30	29	20	37	39	57	70
Hospital Cases ... ..	...	223	271	125	110	113	254	106	171	191
Case Fatality ... ..	15.2	13.38	12.90	7.63	7.14	4.78	6.71	9.7	11.7	10.8
Death-rate per 1000 ...	.15	.22	.21	.09	.09	.06	.11	.11	.17	.21
England and Wales: Death-rate per 1000	.14	.165	.16	.12	.12	.135	.12	.15	.16	.165

The attack-rate for this disease (1.01 per 1000 of the population) was considerably below that for the whole of England and Wales (1.50) and the lowest for all the neighbouring counties with the exception of Herefordshire (.85). The actual number of cases (302) was the lowest since 1904, when only 282 cases were notified. The average case-fatality was high being 15.2 per 100 cases, and for the 3 years (1914-6) 13.5,

which is double the average for the previous three years. Special reference was made in my last Report to the increased fatality accompanying this disease which has now obtained both in years of great prevalence and in a year of very low prevalence and there is still no obvious reason. Districts with exceptionally high fatality were:—

	Cases	Deaths	Fatality	Average Fatality	
				1901-10	1911-16
Newent R.D. ...	7	3	42.9	14.9	16.1
Stow-on-the-Wold R.D. ...	14	5	35.8	14.3	35.7
Cirencester R.D. ...	7	2	28.6	6.9	22.9
East Dean R.D. ...	54	12	22.2	8.3	14.4
Campden R.D. ...	10	2	20.0	11.3	15.4
Gloucester R.D. ...	10	2	20.0	10.6	12.3
Warmley R.D. ...	10	2	20.0	19.8	8.5

From the above table it appears that of the seven districts with high rates, the first five had also exceptionally high average rates in the past six years. They are all rather scattered rural districts and it is possible that difficulties in securing medical assistance early, accentuated by war conditions, may be a part of the explanation. That this is not the complete solution is indicated by the fact that the average fatality in urban districts for the three years 1914-16 is also double what it was in the previous three years. Whatever the reason may be, the increase is very unsatisfactory, and it is to be hoped that future returns will show great improvement.

#### ENTERIC (TYPHOID) FEVER.

TABLE 8.

	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907.
Cases ... ..	39	30	54	35	28	90	26	53	67	63
Deaths ... ..	8	4	15	9	1	8	10	7	11	6
Hospital Cases ... ..	...	9	8	8	6	41	8	25	24	23
Case Fatality ... ..	20.5	16.67	27.76	25.7	3.57	8.89	37.0	13.2	16.4	9.5
Death-rate per 1000 ... ..	.03	.02	.05	.03	.003	.02	.03	.03	.03	.02
England and Wales: Death-rate per 1000	.03	.035	.05	.01	.04	.07	.05	.06	.075	.07

Thirty-nine cases occurred during 1916, nine more than in 1915. The attack-rate (.13 per 1,000 of the population) is below the average for England and Wales (.16), but with

the exception of Somerset (.21) is considerably above the rates in the surrounding counties. The prevalence, however, is very much reduced from what it used to be; thus in the eight years (1896-1903) the average annual number of cases was 116; in the succeeding eight years 60 and in the last five years 37.

The only districts in which more cases than one were notified were Lydney R.D. (2), Warmley R.D. (2), Tewkesbury B. (7), Gloucester R.D. (7) and Cheltenham M.B. (15). Three of these five districts are among those with the highest average attack-rates as will be seen from the following table showing the average attack-rates, taking the averages for the whole County in the corresponding periods as 100.

		1901-10		1911-16
Lydney R.D.	... ..	248	...	57
Campden R.D.	... ..	214	...	14
Kingswood U.D.	... ..	195	...	43
Thornbury R.D.	... ..	152	...	86
Cheltenham M.B.	... ..	148	...	229
Winchcombe R.D.	... ..	148	...	50
Cirencester U.D.	... ..	143	...	186
Gloucester R.D.	... ..	138	...	371
Tewkesbury B.	... ..	124	...	436
Stow-on-the-Wold R.D.	... ..	124	...	21
Warmley R.D.	... ..	105	...	57

#### CEREBRO-SPINAL FEVER.

Eight cases were notified during the year, two each in Cheltenham M.B. and Thornbury R.D. and one each in Charlton Kings U.D., Tewkesbury B., Tetbury R.D. and Winchcombe R.D. The Charlton Kings and Tewkesbury cases proved ultimately to be not cerebro-spinal fever. Of the two Cheltenham cases one was a naval man home on leave and the other a soldier billeted in the town. The Tetbury case, confirmed bacteriologically, proved fatal as did the Winchcombe case; as regards the remaining cases no information has been given.

#### ANTERIOR POLIO-MYELITIS.

So far as information is available 12 cases were notified during the year—10 in Cheltenham M.B. and one each in Nailsworth U.D. and Lydney R.D. As regards the Cheltenham cases Dr. Garrett says—

“A small outbreak occurred in August<sup>24</sup> to October, and that one of the ten cases proved fatal; most of the others were mild cases and recovered with slight persistent paralysis. The cases for the greater part affected one quarter



of the town, though being in different streets ; the same quarter has had cases previously.

The Nailsworth case was a child of 9 years which made a good recovery. As regards the Lydney case I have no information as yet.

### MEASLES AND GERMAN MEASLES.

These diseases were compulsorily notifiable as from the 1st January, 1916. From the summary of the weekly returns the total numbers notified were 3,140 of measles and 172 of German measles. The general action taken appears to have been visiting by the Medical Officer of Health or Sanitary Inspector and the distribution of leaflets.

In the Board's covering circular to the Order, reference is made to the large increase in the mortality from measles during 1915 and to the fact that the measles had caused a large amount of disablement among the troops. For these reasons, the Order was issued making measles and German measles compulsorily notifiable—generally, by parents and guardians, and of first cases in houses, by medical practitioners. The action to be taken on receipt of notification includes enquiries and advice by an officer of the Sanitary Authority and the provision of medical, including nursing, assistance for the poorer inhabitants. This latter measure is of importance in that many lives can be saved and much suffering avoided if parents can be brought to realise that measles is not a trifling ailment, and if they are guided by accurate advice in taking the greatest care, and in exercising precautions which are within their reach.

Provision of nursing services for these conditions can be made economically only by authorities of large districts, inasmuch as, except in times of epidemic, the amount of work is very small. With a view to assisting Local Sanitary Authorities, it has been suggested that two whole-time nurses should be appointed by the County Council and that their services should be made available for districts, the Councils of which would contribute towards their salaries. A communication on this matter was recently (14th October, 1917) addressed to the Local Sanitary Authorities. All the replies have not yet been received but it would appear that the suggestion is generally approved, though there are a few Councils who do not appreciate the importance of the matter and the advantages they would derive from the proposal.

## TUBERCULOSIS.

The following table gives the numbers of new cases recorded and the numbers of survivors each year from 1913:—

Pulmonary Tuberculosis							Other forms of Tuberculosis						
	New cases		Survivors	Per cent.			New cases		Survivors	Per cent.			
			at end of 1916	surviving					at end of 1916	surviving			
1913	... 625	...	367	...	58.7	...	145	...	126	...	86.9		
1914	... 626	...	385	...	61.5	...	135	...	101	...	74.8		
1915	... 542	...	401	...	74.0	...	137	...	93	...	67.9		
1916	... 476	...	388	...	81.5	...	116	...	108	...	93.1		

From these figures there is a tendency for the numbers of new cases notified each year to decline considerably and it will be interesting to observe if this continues. Another interesting feature in the table is the column showing the proportion of cases notified who were surviving at the end of 1916. The actual number of survivors at the end of 1916 was 1,969 (1,541 pulmonary and 428 non-pulmonary), but in addition there were on the register of the Tuberculosis Officer the names of 1,176 persons who had not been notified, making a total number under observation of 3,145 persons. This closely agrees with the total number of existing cases derived from the number of registered deaths, from which the existing numbers of pulmonary and non-pulmonary cases are somewhere about 2,500 and 755 respectively, a total of 3,255.

The scheme for the treatment of tuberculosis in this County includes:—

1. Eight dispensaries at which the Tuberculosis Officer attends weekly.
2. Early cases—52 beds at Cranham Lodge Sanatorium.
3. Surgical cases—12 beds—10 at the Cheltenham General Hospital and two at Cossham Memorial Hospital.
4. Children—19 beds—15 at the Alexandra Home (opened January, 1917) and four at the Cheltenham Dispensary.
5. Advanced cases—24 beds—12 each at the Gloucester and Stroud Isolation Hospitals.

The number of new cases seen at the Dispensaries during the year was 743, the number of attendances being 3,731. The patients admitted to beds in the above Institutions during 1916 were:—

Sanatorium	...	...	...	167
Advanced beds	...	...	...	73
Surgical beds	...	...	...	24
Children's beds	...	...	...	6

During the past three years approximately one-half of the newly notified cases have passed through beds in one or other of the institutions. The chief further needs in connection with the scheme include (in addition to the assistance of another Tuberculosis Officer)—

1. A much greater provision of beds for advanced cases.
2. Greatly increased accommodation for children.
3. An institution—training colony, &c.—where early cases can be treated, occupied in work and trained in a suitable occupation.

#### VENEREAL DISEASES.

In view of the Report of the Royal Commission on Venereal Diseases, the Local Government Board issued an Order, dated 12th July, 1916, placing on County Councils the duty of preparing schemes for the treatment of persons suffering from these diseases and for educational propaganda. Other measures for dealing with the problem, including compulsory notification, and detention of infected persons, also had consideration, but it was concluded that, at any rate in the first instance, free treatment under conditions of secrecy, and education were the most important.

A scheme was adopted by the County Council on the 22nd October, 1916, in accordance with which the following arrangements have been made:—

1. An agreement has been made with the University of Bristol for the examination of specimens and outfits for the purpose have been obtained and distributed.
2. Agreements have been effected with the Cheltenham and Stroud General Hospitals, and with the Corporations of Bristol and Gloucester whereby patients will be seen at fixed times at the General Hospitals in all four towns. It is open to affected persons to attend not only at any one of these Hospitals but at any others which have been approved by the Local Government Board and to obtain treatment, free and under conditions of secrecy.
3. Circular letters, giving information as to the opportunities for treatment and enclosing a leaflet on the dangers of these diseases and the importance of early and effec-



tive treatment, have been drafted and will shortly be sent to—

- (a) Parish and District Councils.
  - (b) Friendly Societies.
  - (c) Clergy and Ministers.
  - (d) Pharmacists.
  - (e) Doctors.
  - (f) Certified Midwives.
4. Arrangements have been made for the exhibition of posters in selected public places, lavatories, public houses, workshops, &c.
  5. It is also proposed to make arrangements for addresses on these diseases, more particularly to suitable groups of persons rather than public lectures, by which it is hoped the dangerous character of the diseases and the necessity for their prevention by moral restraint will be brought home to the public.

The County Council have further appointed a widely representative Committee with the title of "Advisory Committee on Social Welfare" to consider matters in connection with these diseases, and also with maternity and child welfare which may be referred to them from time to time, and their services will be particularly valuable in propagandist work as regards both subjects.

#### MATERNITY AND CHILD WELFARE.

A study of the facts recorded in previous Reports brings out:

1. MATERNAL DISEASE AND MORTALITY.
  - (a) The average annual number of cases of puerperal fever in the 7 years prior to 1902 was 18, and in the past 12 years only 12.
  - (b) The corresponding average annual numbers of deaths were 9 and  $4\frac{1}{2}$  respectively.
  - (c) There has been practically no change in the mortality of women from other diseases and accidents of parturition which still cause the death of about 20 women each year.
2. INFANTILE DEATHS.
  - (a) The average annual death rate per 1,000 births has fallen from 113 in 1896-1900 to 77 in 1911-14,

76 in 1915-16; the mortality in 1916 (66 per 1,000 births) being the lowest on record.

- (b) The rate amongst illegitimate children is double that of legitimate children.
- (c) The main causes to which the mortality was attributed are premature birth and marasmus (20 % each), respiratory diseases (16 %) and diseases of the digestive tract (10 %), which together account for two-thirds of all the deaths.
- (d) In addition to the above infants who died within a year of birth, about 30 per 1,000 living children were born dead.
- (e) A closer analysis shows that saving of child life has occurred at ages over one month, but that at ages below one month, the mortality of infants has actually increased in each of the first three weeks of life.

From the above it would appear that influences at work have already resulted in considerable decrease of illness and death, but that so far maternal mortality due to causes other than puerperal fever has not been reduced during the past 21 years, and the mortality among infants under the age of three weeks has shown a tendency to increase. The lesson from this would appear to be that attention requires to be particularly directed to ante-natal work, skilled attention to mothers in their confinements and special care of infants in the first few weeks of life.

Among the influences which have resulted in the improvement above noted are probably to be included the better care of mothers and babies by the nurse-midwives working for the various District Nursing Associations who now care for rather more than three quarters of the inhabitants of the County. To bring about further improvement more direct measures are necessary and in the following notes will be found a summary of the activities now being undertaken.

These include—

1. Arrangements for the visiting of homes where births have occurred—Health Visiting.
2. Encouragement of the establishment of centres for Maternity and Child Welfare.

3. Assistance in the provision of qualified persons for attendance on women in their confinements.

#### 1. HEALTH VISITING.

This work was commenced voluntarily by 61 nurses attached to District Nursing Associations affiliated to the County Nursing Association, who carried it out without payment for three months. The general scheme was put into operation on 1st July, 1916. Under this the County has been divided into six areas, in each of which a whole-time County Nurse is responsible for Health Visiting, Tuberculosis Visiting, School Nursing, Visiting Mentally Defective Cases and Inspection of Midwives, and undertakes all these duties where there are no District Nurses and where there are District Nurses not co-operating in the scheme. Seventy-eight District Nurses carry out Health Visiting, Tuberculosis Visiting and School Nursing in their respective areas under the supervision of the County Nurses. The association of the latter with District Nurses has been made closer by their appointment as Assistant Superintendents of the County Nursing Association.

The Health Visiting Staff now consists of—

Superintendent of the County Nursing Association who assists the County Medical Officer of Health in the administration of the work.

Seven whole-time County Nurses—

Six in charge of areas.

One relief nurse and general assistant to the County Superintendent.

Seventy-eight District Nurses.

The numbers of visits during the four quarters ending 30th June, 1917, were:—

		First Visit	Total Visits
Quarter ending 30th September, 1916	...	626	998
„ „ 31st December, 1916	...	605	1969
„ „ 31st March, 1917	...	777	2515
„ „ 30th June, 1917	...	877	3482
		<hr/> 2885	<hr/> 8964

From the reports which have reached me the nurses generally are keenly interested in this work and are giving useful assistance to mothers in the special care of their infants; so keen are some of the nurses that on their own initiative they have started



informal but systematic baby weighings. On the other hand there are—as may naturally be expected among so large a number—a few who are not so helpful and in some cases special action may be necessary to bring the work up to the standard desired.

## 2. MATERNITY AND CHILD WELFARE CENTRES.

Though up to the present time no centres have been started directly by the County Council, they decided on the 9th July, 1917, to contribute towards the expenses of centres maintained voluntarily and this fact has stimulated the formation of a small number of centres already: the total known number now existing is 23. These vary in character according to the needs of the different localities from simple baby weighings at regular intervals at the home of the District Nurse to the larger and more formal centres, such as those at Cinderford and Stroud where doctors attend regularly. Each kind has its place in the scheme, but the greatest value from such a centre will be realised only when the assistance of a doctor is available. It is especially difficult to secure the regular attendance of doctors under existing conditions, but for every centre there should be a doctor to whom children that are not normal can be referred, even if he is unable to attend at the centre regularly.

## 3. PROVISION OF MIDWIFERY ASSISTANCE.

The County Council also decided (9th July, 1917) to make grants to secure skilled attendance on women in their confinements both by assisting in the provision of midwives and by contributing towards the fees of doctors whose help is sought by certified midwives, and towards the fees for special cases requiring treatment in maternity wards. To give effect to the proposals a special "Provision of Midwives" Sub-Committee was appointed, and, it is hoped, that, with the assistance of the County Nursing Association, it may ultimately be practicable to establish District Nurse-Midwives in every part of the County at present without this advantage, and thus to provide midwifery assistance in all parts. Pending the formation of these District Nursing Associations it is proposed to provide necessary assistance through the services of emergency nurse-midwives; at present these are two in number, namely the King Edward VII. Memorial Nurses. The number of parishes for which at present the services of certified midwives are not available is (11th October, 1917) 58, with a population of 22,546.

### BACTERIOLOGICAL EXAMINATIONS.

Under the agreement made by the County Council with the University of Bristol, arrangements have been made for bacteriological examination of the following specimens in their Public Health Laboratory:—

- i. Diphtheria.—Swabs from throats and noses for diphtheria bacillus (January, 1904).
- ii. Tuberculosis.—Sputum for tubercle bacillus (October, 1904).
- iii. Enteric (Typhoid) Fever.—(a) Blood for Widal reaction. (b) Urine and fæces for typhoid bacilli (October, 1909, and December, 1916).
- iv. Cerebro-spinal Fever.—Cerebro-spinal fluid for meningo-coccus (October, 1912).
- v. Venereal Diseases.—(a) Microscopical examination for spirochetes and gonococci. (b) Wasserman test of blood and cerebro-spinal fluid. (c) Examination of foetal tissues for spirochetes. (d) Bacteriological examination of urine. (April, 1917).

For III. (b) and IV. the approval of the Chairman of the Public Health and Housing Committee is required, but as regards the remaining specimens there are no restrictions. The average yearly (1905-14) number of specimens examined and the numbers for 1915 and 1916 were:—

		Diphtheria		Enteric Fever		Tuberculosis		Total
1905-14	...	1553	...	49	...	207	...	1809
1915	...	1713	...	31	...	369	...	2113
1916	...	721	...	32	...	348	...	1101

Six specimens of cerebro-spinal fluid were examined for meningo-cocci in 1915 and one in 1916. The arrangements with respect to Venereal Diseases came into operation only in April, 1917.

These advantages are greatly appreciated by medical practitioners and requests for other examinations are received from time to time. Many of these would be useful with a view to the prevention of disease, and the scope of the present arrangements might advantageously be made more general.

### ISOLATION HOSPITALS.

So far as information has been given there were no important changes in the matter of Isolation Hospital accommo-

dation during 1916, but there are several districts without complete arrangements. During the year certain renovations were made at Chipping Sodbury and a new ambulance was purchased. At Newent the Medical Officer of Health reports that some improvements have been made, but that his suggestions for enlargement could not be carried out. The laundry at Northleach has been converted into diphtheria wards.

The most important addition to the resources of the County made during 1916 was the tuberculosis pavilion (with 12 beds) at the Stroud Isolation Hospital which was opened in June, 1916. The accommodation at this hospital and at the Gloucester City Isolation Hospital has been most useful, and our experience shows not only that patients are far more ready to take advantage of it than was anticipated, but also that persons do not object to going to an institution more or less remote from their homes. This experience is valuable as it would now appear to be a practical suggestion to provide the further accommodation, urgently required, at one convenient centre in the County.

In regard to provision for cases of small-pox, mention has been made in previous Reports of the advantages there would be in establishing one or two central hospitals to serve unprovided districts. For many years past the County Council have endeavoured to make suitable arrangements on these lines without success. The decision by the Delancey Trustees to erect a small-pox hospital for their area appeared to offer an opportunity for arrangements for a hospital to serve a much larger area than that originally intended, and negotiations with this in view were opened in June, 1916. As a result the Trustees have entered into an agreement with the County Council to take cases from 12 districts in the east and south-east of the County as well as from the three districts originally proposed, and the Local Government Board have issued an Order (dated 4th August, 1917) constituting the 12 districts into a hospital district. The area thus provided for includes:—

Charlton Kings U.D.  
Cheltenham M.B.  
Cirencester U.D.  
Stow-on-the-Wold U.D.  
Tetbury U.D.  
Tewkesbury B.

Campden R.D.  
Cirencester R.D.  
Northleach R.D.  
*and the Gloucestershire parts of*  
Faringdon R.D.  
Stow-on-the-Wold R.D.  
Tetbury R.D.  
Tewkesbury R.D.  
Winchcombe R.D.



Through this concession of the Delancey Trustees, which is greatly appreciated, there will—as soon as the hospital is built—be accommodation immediately available for the *early* cases of small-pox which may arise in any of the above districts, and for *all* cases occurring in the Charlton Kings U.D., Cheltenham M.B. and Cheltenham R.D. It is hoped that, with this accommodation always ready, if prompt and active measures are taken by the Local Sanitary Authority concerned, any outbreak may be controlled at once. Should it prove, unfortunately, that all centres of infection have not been immediately isolated, and that a more or less general outbreak is threatened, the time afforded before the occurrence of secondary cases by the removal of the early case or cases will give opportunity for the provision of such emergency accommodation as may be necessary to meet the circumstances.

There are still 10 sanitary districts without accommodation for small-pox, and it is hoped that it may be practicable to make satisfactory arrangements for them in a similar manner.

#### GENERAL SANITARY MATTERS.

In accordance with the suggestion of the Local Government Board, the reports for 1916—so far received—have been greatly abbreviated and much less information than usual has been given on sanitary matters. Speaking generally, there are few new facts brought out and in the main the notes made but emphasize the needs mentioned in previous reports. Certain minor matters had attention, such as repair of sewers, but beyond this no construction work appears to have been carried out.

#### HOUSING.

The records of the inspection undertaken and the houses built during 1916 are not completely available, but from the reports so far received it is evident that much less inspection has been done and many fewer houses built than in previous years. The pressing need for improvement in housing in very many parts is again emphasized in several of the reports, and it is satisfactory that the Government have intimated their intention of facilitating matters by affording substantial financial assistance from public funds. At the same time (28th July, 1917) the Board asked for returns as to existing conditions and as to requirements, immediate and at the close of the war, from

all District Councils. From these and from previous information, there is a considerable lack of accommodation in the County generally, and the problem of making good the deficiency under normal conditions is accentuated by the large numbers of employees in new works, connected with the war, which have been established in various parts of the County. Apart from the latter, the number of new houses required was estimated to be somewhat about 1,000: the indications are that for the employees in the new Government works—if these will be conducted permanently on anything like the present scale—a further 600-800 will be required. It appears that most of the Councils are prepared to carry out housing schemes with the assistance of Government funds, but, in the event of their being unwilling to undertake the work, it would seem to be desirable that County Councils should be empowered to do so.

#### FOODS AND DRUGS.

The following table gives the numbers of samples examined and the number reported to be adulterated in the eight years 1908-15 and during 1916:—

		1908-1915		Per cent.		1916		Per cent.		
		Examined	Adulterated	Adulterated		Examined	Adulterated	Adulterated		
Milk	...	932	109	...	11.7	...	110	22	...	20.0
Butter	...	811	9	...	1.11	...	111	2	...	1.8
Margarine	...	29	0	...	—	...	28	0	...	—
Tea, Coffee, Cocoa	...	287	12	...	4.2	...	19	0	...	—
Sugar	...	250	0	...	—	...	5	1	...	20.0
Other goods	...	404	0	...	—	...	129	2	...	1.55
Alcoholic Drinks	...	603	47	...	7.8	...	57	15	...	26.3
Others	...	258	0	...	—	...	20	0	...	—
Total		3574	177	...	4.96	...	479	42	...	8.8

As mentioned last year the most unsatisfactory point in this connection has been the increase in the adulteration of milk, and the percentage number of samples reported to be adulterated in 1916 (20.0) is little different from that in 1915 (21.4). Attention has frequently been drawn to this matter—and the effect it must have on the persons most dependent on this food for their nourishment, mainly infants and invalids—but most strikingly in the judgment given by the Lord Chief Justice in the case of *Grigg v. Smith* in the King's Bench Division on 26th July, 1917, in the course of which as reported—

“He wished to add that the arguments had convinced him that it was desirable for the authorities to reconsider the position, and to determine

whether it was the intention of the Legislature or of the Departments which had the means of introducing amended Acts of Parliament, that milk should be sold to the public, as it was in this case, with an undoubted deficiency in milk fat, as compared with milk usually sold ; the result being that the farmer could retain for himself the better quality milk, leaving the public the inferior quality."

In these views Mr. Justice Ridley and Mr. Justice Atkin concurred. The latter added that—

"A farmer was now entitled by law to give a preference to his own calves over the babies of his customers."

On the whole, the inspection of places where food is prepared appears to have been maintained much as previous years, and this branch of work seems to have suffered from war conditions less than some others.

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TABLE I.—RATES, &amp;c.

DISTRICTS.	BIRTHS						DEATHS							
	Population for Birth Rates	Legiti- mate	Illegiti- mate	%	Total	Rate	Population for Death Rates	Total	Rate	Under 1 Year				
										Legiti- mate	Illegiti- mate	Total	Infantile Mortality	
URBAN DISTRICTS—														
Awre ... ..	1,096	22	2	8·3	24	21·9	1,007	24	23·8	..	...	2	83	
Cbarlton Kings ... ..	4,576	62	5	7·5	67	14·6	4,206	58	13·8	2	...		30	
Cheltenham ... ..	45,746	693	67	8·8	760	16·6	42,045	720	17·1	...	...	58	76	
Cirencester ... ..	7,222	131	11	7·7	142	19·7	6,638	102	15·4	7	1	8	56	
Coleford ... ..	2,758	58	5	7·9	63	22·8	2,535	30	11·8	...	...	...	...	
Kingswood ... ..	13,622	291	3	1·0	297	21·8	12,520	146	11·7	19	...	19	64	
Nailsworth ... ..	3,045	52	2	3·7	54	17·7	2,799	40	14·3	2	...	2	37	
Newnham ... ..	1,093	24	1	4·0	25	22·9	1,005	13	12·9	...	...	1	40	
Stow-on-the-Wold ... ..	1,183	22	...	...	22	18·6	1,087	18	16·6	2	...	2	91	
Stroud ... ..	8,248	137	8	5·5	145	17·6	7,581	115	15·2	7	1	8	55	
Tetbury ... ..	1,676	25	3	10·7	28	16·7	1,540	33	21·4	3	...	3	107	
Tewkesbury ... ..	4,908	74	10	11·9	81	17·1	4,511	60	13·3	5	5	10	119	
Westbury-on-Severn ... ..	1,725	32	3	8·6	35	20·3	1,585	16	10·1	...	...	...	...	
Total Urban Districts ... ..	96,898	1,626	120	6·9	1,746	18·0	89,059	1,375	15·44			115	66	
RURAL DISTRICTS—														
Campden ... ..	5,305	84	2	2·3	86	16·2	4,876	63	12·9	7	...	7	81	
Cheltenham ... ..	5,246	72	5	6·5	77	14·7	4,822	64	13·3	...	...	4	52	
Cbipping Sodbury ... ..	21,032	337	19	5·3	356	16·9	19,331	338	17·5	...	...	20	56	
Cirencester ... ..	12,007	200	13	6·1	213	17·7	11,036	160	14·5	13	1	14	66	
Dursley ... ..	12,708	205	10	4·7	215	16·9	11,680	178	15·2	13	2	15	70	
East Dean and United Parishes ... ..	21,210	481	30	5·9	511	24·1	19,493	293	15·0	...	...	19	96	
Faringdon (part of) ... ..	1,096	9	2	18·2	11	10·0	1,007	17	16·9	...	...	...	...	
Gloucester ... ..	11,446	199	8	3·9	207	18·1	10,520	163	15·5	...	...	12	58	
Lydney ... ..	9,430	186	10	5·1	196	20·8	8,667	118	13·6	...	...	12	61	
Marston Sicca ... ..	1,735	25	3	10·7	28	16·1	1,595	26	16·3	2	...	2	71	
Newent (part of) ... ..	7,021	138	4	2·8	142	20·2	6,453	96	14·9	...	...	1	91·5	
Northleach ... ..	7,853	132	3	2·2	135	17·2	7,218	105	14·6	6	2	8	59	
Pebworth ... ..	3,342	52	4	7·1	56	16·75	3,072	36	11·7	3	...	3	54	
Stow-on-the-Wold (part of) ... ..	6,499	108	2	1·8	110	16·9	5,973	83	13·9	7	...	7	64	
Stroud ... ..	28,605	407	15	3·6	422	14·8	26,290	395	15·0	25	...	25	59	
Tctbury (part of) ... ..	3,573	68	6	8·1	74	20·7	3,284	42	12·8	3	...	3	41	
Tewkesbury (part of) ... ..	4,830	64	5	7·25	69	14·3	4,439	61	13·8	1	...	1	14·5	
Thornbury ... ..	18,531	279	11	3·8	290	15·6	17,032	256	15·0	15	...	15	52	
Warmley ... ..	18,446	314	15	4·6	329	17·8	16,954	218	12·9	20	1	21	61	
West Dean ... ..	14,860	337	16	4·5	353	22·2	13,658	155	11·9	22	2	24	68	
Wbeatenhurst ... ..	6,092	94	7	6·9	101	16·6	5,599	99	17·7	8	1	9	89	
Winchcombe (part of) ... ..	9,199	118	7	5·6	125	13·6	8,455	122	14·4	5	4	9	72	
Total Rural Districts ... ..	230,066	3,909	197	4·8	4,106	17·8	211,454	3,088	14·6			273	66·5	
Administrative County ... ..	326,964	5,535	317	5·4	5,852	17·9	300,513	4,463	14·9			388	66	



TABLE II.  
NOTIFIABLE INFECTIOUS DISEASES.—1916.

	Census Population, 1911	Diphtheria			Erysipelas		Scarlet Fever			Enteric Fever			Puerperal Fever			Cerebro-Spinal Meningitis			Polio-myelitis			Ophthalmia Neonatorum			Pulmonary Tuberculosis			Other Tuberculosis			Measles		Total	
		Cases	Hospital	Deaths	Cases	Deaths	Cases	Hospital	Deaths	Cases	Hospital	Deaths	Cases	Hospital	Deaths	Cases	Hospital	Deaths	Cases	Hospital	Deaths	Cases	Hospital	Deaths	Cases	Hospital	Deaths	Cases	Deaths	Cases	Deaths			
Urban Districts—																																		
Awre ... ..	1070	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	29	...	30	...	
Charlton Kings ... ..	4495	8	6	...	4	...	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	3	2	1	...	...	101	4	120	6		
Cheltenham ... ..	48942	69	56	8	25	...	61	53	...	15	13	2	1	1	1	2	2	...	10	4	1	6	3	...	95	41	47	38	9	11	537†	8	859	78
Cireneester ... ..	7631	8	8	1	5	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	7	3	1	...	4	20	1	46	10	
Coleford ... ..	2601	...	...	...	...	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	6	2	1	...	...	17	...	26	3	
Kingswood ... ..	12700	2	...	1	1	...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	19	17	4	2	2	356	3	394	23		
Nailsworth ... ..	3031	1	1	...	...	...	5	5	...	...	...	...	1	1	1	...	...	...	1	1	...	...	...	6	4	5	...	1	...	22	...	36	6	
Nownham ... ..	1024	...	...	...	...	...	6	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	2	...	1	1	...	43	...	55	...	
Stow-on-the-Wold ... ..	1301	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	10	...	10	...		
Stroud ... ..	8767	3	2	...	3	...	17	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	17	10	3	3	6	3	...	46	16	
Tetbury ... ..	1758	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	3	...	...	...	6	...	11	3	
Tewkesbury ... ..	5287	2	2	...	...	...	...	...	...	7	7	1	...	...	...	1*	1*	...	...	...	...	2	...	...	2	2	1	...	...	115	2	129	4	
Westbury ... ..	1812	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	2	1	2	...	...	2	...	11	1	
Total—Urban Districts	100419	93	75	10	38	2	406	70	...	22	20	3	2	2	2	4	4	...	11	5	1	9	3	...	176	105	91	51	16	23	1261	18	1773	150
Rural Districts—																																		
Campden ... ..	5597	10	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	4	4	...	1	14	1	33	8	
Cheltenham ... ..	5254	1	...	1	3	1	12	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	4	2	2	...	...	90	...	116	4	
Chipping Sodbury ... ..	20955	10	...	4	11	...	67	17	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	27	6	25	20	1	11	181	13	319	50
Cireneester ... ..	12746	7	7	2	2	...	11	3	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	16	5	11	7	...	3	243	2	288	19	
Dursley ... ..	12233	8	2	...	10	...	7	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	8	4	7	2	1	5	103	...	139	12	
East Dean ... ..	19952	56	40	12	7	...	27	12	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	17	20	13	4	3	9	347	7	459	42	
Faringdon ... ..	1167	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25	...	25	...	
Gloucester ... ..	12615	8	3	2	6	...	7	3	...	7	1	2	2	...	2	...	...	...	...	...	...	...	...	21	9	9	4	4	2	152	4	207	21	
Lydney ... ..	9005	18	9	1	2	...	48	18	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	17	12	6	2	...	1	19	...	107	8	
Marston Sicea... ..	1609	...	...	...	...	...	8	8	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	1	12	...	22	2	
Newent ... ..	6964	7	2	3	6	...	36	7	...	1	...	...	1	...	...	...	...	...	...	...	...	3	...	...	11	1	3	...	...	1	12	...	77	7
Northleach ... ..	8056	12	12	...	...	...	12	10	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	6	2	7	2	1	1	36	...	71	8	
Pebworth ... ..	3239	3	3	...	...	...	13	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1†	2	3	...	...	...	1	...	18	3	
Stow-on-the-Wold ... ..	6803	14	...	5	2	...	30	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	3	2	1	1	...	2	26	...	77	9	
Stroud ... ..	28068	10†	10	1	7	1	47	35	1	1	1	2	2	...	2	...	...	...	...	...	...	...	...	13	33	26	4	1	5	73	1	187	39	
Tetbury ... ..	3913	3	...	1	...	...	5	...	...	...	...	...	1	1	1	1	...	...	...	...	...	...	...	3	1	...	...	...	1	57	...	70	3	
Tewkesbury ... ..	5074	...	...	...	2	...	1	1	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	7	1	1	...	...	2	102	...	114	3
Thornbury ... ..	19079	4	...	...	9	...	10	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	27	12	19	6	1	4	328	4	386	28	
Warmley ... ..	17188	10	4	2	7	...	16	8	...	2	1	1	...	...	...	...	...	...	...	...	...	3	...	...	24	6	20	10	3	4	115	4	187	31
West Dean ... ..	13454	22	...	2	1	...	35	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	9	18	7	1	4	100	...	188	25	
Wheatenhurst... ..	6093	5	...	1	1	...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	3	6	1	...	1	37	...	62	8	
Winchcombe ... ..	9531	6	3	...	3	...	6	5	1	...	...	...	...	...	...	1	1	1	...	...	...	1	...	...	16	2	10	...	1	3	45	...	78	15
Total Rural Districts	228595	214	95	36	81	2	411	150	5	16	6	5	9	1	7	4	1	2	...	...	...	13	...	...	287	135	191	77	14	61	2118	36	3230	345
Administrative County	329014	307	170	46	119	4	517	220	5	38	26	8	11	3	9	8	5	2	11	5	1	22	3	...	463	240	282	128	30	84	3379	54	5003	495

\* Notification proved incorrect.

† Notification in four cases incorrect.

‡ From weekly statements.





TABLE III. (A)—URBAN DISTRICTS.

1916.

L.G.B.—TABLE III.—CAUSES OF AND AGES AT DEATH.

CAUSES.	All ages	Under 1 year	1-2 years	2-5 years	5-15 years	15-25 years	25-45 years	45-65 years	65 years and over	Avre	Charlton Kings	Cheltenham	Cirencester	Coleford	Kingswood	Nailsworth	Newnham	Stow-on-the-Wold	Stroud	Tetbury	Tewkesbury	Westbury-on-Severn
Enteric Fever ... ..	3	...	...	...	1	...	...	2	...	...	...	2	...	...	...	...	...	...	...	...	1	...
Small-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Measles ... ..	18	3	7	6	...	...	2	...	...	...	4	8	1	...	3	...	...	...	...	...	...	...
Scarlet Fever ... ..	...	...	...	...	...	...	...	...	...	...	...	2	2	...	1	...	...	...	...	...	1	...
Whooping Cough... ..	6	1	3	2	...	...	...	...	...	...	...	8	1	...	1	...	...	...	...	...	...	...
Diphtheria and Croup ... ..	10	...	3	6	1	...	...	...	...	...	...	8	1	...	1	...	...	...	...	...	...	...
Influenza ... ..	37	2	...	...	...	3	3	6	23	...	1	20	5	...	2	...	...	2	5	1	1	...
Erysipelas... ..	2	...	...	...	...	...	1	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...
Phthisis ... ..	91	...	...	...	2	28	36	20	5	...	2	47	3	2	17	5	...	...	10	3	1	1
Tuberculous Meningitis... ..	4	...	1	1	1	1	...	...	...	...	...	1	2	...	...	...	...	...	1	...	...	...
Other Tuberculous Diseases ... ..	19	...	1	2	4	5	1	3	3	...	...	10	2	...	2	...	...	...	5	...	...	...
Cancer, Malignant disease ... ..	134	...	...	...	...	...	7	59	68	3	8	81	9	2	9	3	1	1	13	1	2	1
Rheumatic Fever... ..	6	...	...	...	2	...	3	...	1	...	1	2	...	...	2	...	...	...	1	...	...	...
Meningitis... ..	9	1	1	1	1	2	1	2	...	...	...	5	...	...	3	...	...	...	1	...	...	...
Organic Heart Disease ... ..	178	...	...	...	2	5	13	44	114	2	14	91	14	5	15	8	2	1	12	4	8	2
Bronchitis ... ..	74	6	...	2	...	...	2	16	48	1	1	25	5	3	12	4	1	1	9	6	6	...
Pneumonia (all forms) ... ..	73	10	3	5	4	2	5	12	32	...	2	51	4	...	5	...	...	1	5	...	3	2
Other Diseases of Respiratory Organs ... ..	22	2	2	1	1	...	1	7	8	...	1	11	4	...	3	...	...	1	2	...	...	...
Diarrhoea and Enteritis (under 2 years) ... ..	12	12	...	...	...	...	...	...	...	...	1	8	1	...	2	...	...	...	...	...	...	...
Appendicitis and Typhlitis ... ..	4	...	...	...	...	...	1	2	1	1	1	...	...	...	...	...	...	...	1	...	1	...
Cirrhosis of Liver ... ..	9	...	...	...	...	...	3	4	2	...	...	6	...	...	2	...	...	...	1	...	...	...
Alcoholism ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nephritis and Bright's Disease ... ..	35	...	...	...	...	...	2	11	22	...	4	22	2	...	2	...	3	...	1	...	...	1
Puerperal Fever ... ..	2	...	...	...	...	1	1	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...
Other Accidents and Diseases of Parturition ... ..	7	...	...	...	...	...	6	1	...	...	...	4	...	...	1	1	...	...	...	...	1	...
Congenital Debility, and Malformation and Premature Birth ... ..	53	51	1	...	1	...	...	...	...	2	1	23	2	...	12	2	...	2	3	2	4	...
Violent Deaths (excluding suicides) ... ..	29	3	...	...	2	3	3	5	13	2	2	13	4	3	1	1	...	...	1	1	1	...
Suicides ... ..	11	...	...	...	...	1	3	5	2	...	...	2	1	...	3	...	1	1	2	1	...	...
Other Defined Diseases ... ..	521*	22	3	10	7	10	34	77	358	13	15	276*	37	14	48	15	5	8	41	14	27	8
Diseases, ill-defined or unknown ... ..	6	2	...	...	...	...	1	1	2	...	...	1	2	...	...	...	...	...	1	...	1	1
TOTAL ... ..	1375	115	25	36	29	61	129	277	703	24	58	720	102	30	146	40	13	18	115	33	60	16

\* Includes one case of Polio-myelitis.





TABLE III. (B)—RURAL DISTRICTS.

1916.

L.G.B. TABLE III.—CAUSES OF AND AGES AT DEATH.

CAUSES.	All ages	Under 1 year	1-2 years	2-5 years	5-15 years	15-25 years	25-45 years	45-65 years	65 years and over	Camden	Cheltenham	Chipping Sodbury	Cirencester	Dursley	East Dean and United Parishes	Faringdon (part of)	Gloucester	Lydney	Marston Sica	Newent (part of)	Northleach	Pebworth	Stow-on-the-Wold (part of)	Stroud	Tetbury (part of)	Tewkesbury (part of)	Thornbury	Warmley	West Dean	Wheatenurst	Winchcombe (part of)
Enteric Fever ... ..	5	..	..	..	1	..	3	..	1	..	..	..	..	..	..	..	2	..	..	..	..	..	..	2	..	..	..	1	..	..	..
Small-pox ... ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles ... ..	36	5	8	12	8	2	..	1	..	1	..	13	2	..	7	..	4	..	..	..	..	..	..	1	..	..	4	4	..	..	..
Scarlet Fever ... ..	5	..	..	1	1	1	2	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	1	..	..	..	..	1	..	1	1
Whooping Cough... ..	11	7	4	..	..	..	..	..	..	..	1	1	..	..	1	..	..	..	1	..	4	..	..	..	..	2	..	1	..	..	..
Diphtheria and Croup ... ..	36	1	3	15	16	..	1	..	..	2	1	1	2	..	12	..	2	1	..	3	..	..	5	1	1	..	..	2	2	1	..
Influenza ... ..	76	1	1	..	..	2	6	19	47	1	1	4	3	2	3	1	4	1	..	..	1	..	12	20	..	1	11	4	1	3	3
Erysipelas ... ..	2	..	..	..	..	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Phthisis ... ..	191	..	2	2	10	46	81	40	10	4	2	25	11	7	13	..	9	6	..	3	7	3	1	26	..	1	19	20	18	6	10
Tuberculous Meningitis ... ..	24	3	5	3	9	4	..	..	..	1	..	4	2	1	5	..	1	1	1	..	..	..	1	..	..	1	2	2	1	1	1
Other Tuberculous Diseases ... ..	37	4	4	2	9	6	4	8	..	..	..	7	1	4	4	..	1	..	..	1	1	..	2	4	1	2	3	2	2	..	2
Cancer, Malignant Disease ... ..	278	..	..	..	..	1	20	112	145	8	9	20	19	23	24	3	19	7	2	8	11	1	4	42	6	9	23	15	11	3	11
Rheumatic Fever... ..	13	..	..	..	5	6	1	1	..	..	..	2	..	3	2	..	..	2	..	..	..	..	..	1	..	..	..	1	1	..	1
Meningitis ... ..	17*	1	..	3	7	4	1	1	..	..	1	..	1	..	2	..	1	..	..	..	..	..	..	1	1	..	3*	3	2	..	2
Organic Heart Disease ... ..	472	..	..	..	5	11	28	121	307	8	12	51	30	28	33	1	25	19	3	20	16	5	8	61	4	12	44	35	12	19	26
Bronchitis ... ..	219	16	4	1	1	..	9	29	159	3	3	26	5	14	20	2	19	13	3	1	2	2	3	23	5	1	20	21	15	7	8
Pneumonia (all forms) ... ..	138	25	13	5	4	8	21	31	31	5	3	15	9	7	11	..	5	4	..	7	4	2	8	8	1	3	18	9	9	6	4
Other Diseases of Respiratory Organs ... ..	44	4	1	2	1	4	4	10	18	..	1	7	1	1	8	..	1	3	1	1	2	..	..	7	..	..	2	1	4	2	2
Diarrhoea and Enteritis (under 2 years) ... ..	27	19	8	..	..	..	..	..	..	1	..	1	1	3	5	..	2	1	..	..	1	..	..	1	..	1	3	3	3	..	1
Appendicitis and Typhlitis ... ..	12	..	..	..	4	3	1	3	1	1	1	..	1	..	1	1	1	2	1	..	..	1	..	1	..	..	..	1	..	..	..
Cirrhosis of Liver ... ..	30	..	..	..	..	..	5	17	8	..	..	3	2	3	2	..	1	2	..	..	1	1	1	1	..	3	6	1	2	..	1
Alcoholism... ..	2	..	..	..	..	..	1	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Nephritis and Bright's Disease ... ..	78	..	..	..	1	2	16	25	34	4	1	9	1	3	6	..	5	5	..	4	2	..	4	13	..	2	9	3	3	3	1
Puerperal Fever ... ..	7	..	..	..	..	..	7	..	..	..	..	..	1	..	..	..	2	..	..	..	..	..	1	2	1	..	..	..	..	..	..
Other Accidents and Diseases of Parturition ... ..	14	..	..	..	..	2	12	..	..	..	1	..	1	..	1	..	..	..	1	..	1	1	1	4	..	..	..	..	1	1	1
Congenital Debility, and Malformation and Premature Birth ... ..	135	131	3	..	1	..	..	..	..	3	2	8	7	4	24	..	6	7	1	9	3	..	3	15	3	1	6	9	11	9	4
Violent Deaths (excluding suicides) ... ..	113	7	1	8	15	6	20	27	29	2	1	14	2	6	12	..	5	6	2	5	5	1	5	12	..	2	14	4	3	9	3
Suicides ... ..	20	..	..	..	..	1	8	8	3	..	1	..	1	5	1	..	..	1	1	1	1	..	..	3	..	1	..	1	1	1	1
Other defined Diseases ... ..	1027	48	7	13	26	25	67	200	641	19	22	126	53	63	94	9	48	37	8	33	43	19	25	133	19	21	66	73	50	28	38
Diseases ill-defined or unknown ... ..	19	1	..	..	..	1	3	9	5	..	..	1	4	..	1	..	..	..	..	..	..	..	..	9	..	1	2	..	..	..	1
TOTAL ... ..	3088	273	64	67	124	135	322	664	1439	63	64	338	160	178	293	17	163	118	26	96	105	36	83	395	42	61	256	218	155	99	122

\* Includes 2 cases of Cerebro-Spinal Fever (Thornbury R.D., 1, and Winchcombe R.D., 1)

